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Applicant(s): Matsumoto

Docket No.
YKI-0136

Application No.
10/627,148

Filing Date
07/25/2003

Examiner
Louie, Wai Sing

Group Art Unit
2814

Invention: **ORGANIC EL PANEL**

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TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
YKI-0136

In Re Application Of: Matsumoto

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/627,148	07/25/2003	Louie, Wai Sing	23413	2814	2521

Invention: ORGANIC EL PANEL

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Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

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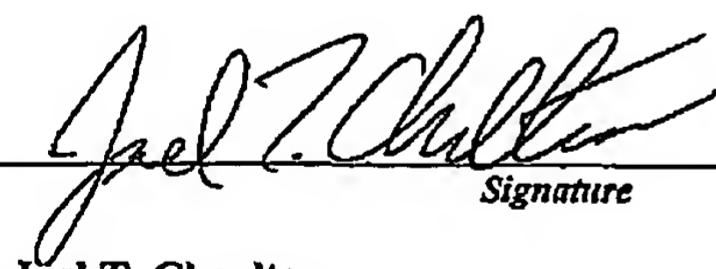
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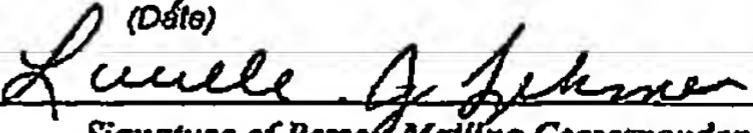


Signature

Dated: October 11, 2005

Joel T. Charlton
Registration No. 52,721
Cantor Colburn LLP
Customer No. 23413
404-607-9991 (telephone)
404-607-9981 (facsimile)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OCT 11 2005

Appellant: Shoichiro Matsumoto)
Serial No.: 10/627,148) Group Art Unit: 2814
Filed: July 25, 2003)
For: ORGANIC EL PANEL) Examiner: Louie, Wai Sing

Via Facsimile: 1-571-273-8300
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APPEAL BRIEF

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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Sanyo Electric Co., Ltd.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellant, Appellant's legal representatives, or assignee that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-9 are pending in the application. Claims 1-9 stand finally rejected. Claims 1-9 as they currently stand, are set forth in the Claims Appendix. Appellant hereby appeals the final rejection of Claims 1-9.

IV. STATUS OF THE AMENDMENTS

No amendments have been filed subsequent to the final rejection dated July 5, 2005. All prior amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

An organic EL panel having a plurality of organic EL elements (50) arranged in a matrix, comprises a drive transistor (21) provided to each of the plurality of organic EL elements (50), for controlling a drive current to be supplied to a corresponding organic EL element (50); and a peripheral transistor disposed within a peripheral circuit which is formed outside of a display area where the plurality of organic EL elements (50) are arranged, for outputting a signal for controlling the drive transistor (21), wherein a gate length of the drive transistor is set longer than a gate length of the peripheral transistor. (Claim 1, Figures 1, 2A, 2B).

For clarity, it is noted that a first TFT (10), which is a selection TFT (Page 2, lines 1-2), is a different transistor than the peripheral transistor. The peripheral TFT is used for a switching operation, and operates at a high speed by utilizing a power source (Vdd), which is different from that for the second TFT (21). (Page 7, lines 13).

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Meanwhile, the second TFT (21) is used to control an amount of current to be supplied to the organic EL element 50 to thereby control display luminous, through control of a gate voltage of itself.

Independent Claim 5 is directed an organic EL panel having a plurality of organic EL elements arranged in a matrix, comprising, *inter alia*, (a gate length L)/(a gate width W) of the drive transistor is set larger than (a gate length L)/(a gate width W) of the peripheral transistor.

The dependent claims, which are further patentably distinct, relate to various lengths, widths, and length/width of gate electrode of the drive and peripheral transistors. More particularly, dependent Claims 2 and 6 defines that the gate length of the peripheral transistor is set to a value between 1 and 10 μ m. Dependent Claims 3 and 7 defines that the gate length of the drive transistor is set to a value between 10 and 100 μ m. In dependent Claim 4, a gate width of the drive transistor and a gate width of the peripheral transistor are set to the same value. In dependent Claims 8 and 9, the gate width of the peripheral transistor is respectively set to a value between 5 and 500 μ m and the gate width of the drive transistor is set to a value between 5 and 10 μ m.

According to the presently claimed invention, a longer gate length is ensured for the drive transistor (21) relative to the peripheral transistor. This makes it possible to reduce the current to be supplied from the drive transistor (21) to an organic EL element, and to attain current control over a wider range. (Page 2, line 25 to page 3, line 1).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claim 1 stands rejected under 35 U.S.C. § 102(e), as allegedly anticipated by U.S. Patent No. 6,420,758 to Nakajima.

Claims 2-9 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 6,420,758 to Nakajima.

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VII. ARGUMENT

Claim 1 is not anticipated by Nakajima.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

Verdegaal Bros. V. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the * * * claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Independent Claim 1 is directed to an organic EL panel, comprising, *inter alia*, the following elements: "a drive transistor provided to each of the plurality of organic EL elements...a peripheral transistor disposed within a peripheral circuit which is formed outside of a display area where the plurality of organic EL elements are arranged, for outputting a signal for controlling the drive transistor, wherein a gate length of the drive transistor is set longer than a gate length of the peripheral transistor."

In making the final rejection, the Examiner relied upon Figures 4b, 5, 6a-b and 22a of Nakajima. More particularly, the Examiner stated that Nakajima discloses:

A drive transistor 505 (pixel circuit see fig. 4b section B-B and fig. 6a) provided to each of the plurality of organic EL elements 401, for controlling a drive current to be supplied to a corresponding organic EL element 401 (Col. 12, lines 48 to Col. 13, line 22 and fig. 4-5); a peripheral transistor 521 and 522 (CMOS circuit see fig. 4b section A-A and fig. 6b) disposed within a peripheral circuit which formed outside of a display area (see fig. 5, where the drive circuit 402 and 403 are outside of the pixel area 401) where the plurality of organic EL elements 401 are arranged for outputting a signal for control the drive (pixel) transistor 505 (Col. 12, lines 27-47 and fig. 4b); a gate length of the drive transistor is set longer than a gate length of the peripheral transistor 521 and 522 (fig. 22a).

(Final O.A., dated July 05, 2005).

Appellant respectfully submits that the CMOS circuit (the drive circuit) at the left in Fig. 4a of Nakajima is a peripheral circuit and the transistor at the right in Fig. 4a is a pixel transistor (described from Col. 9, line 8). Absent in the specification of Nakajima is

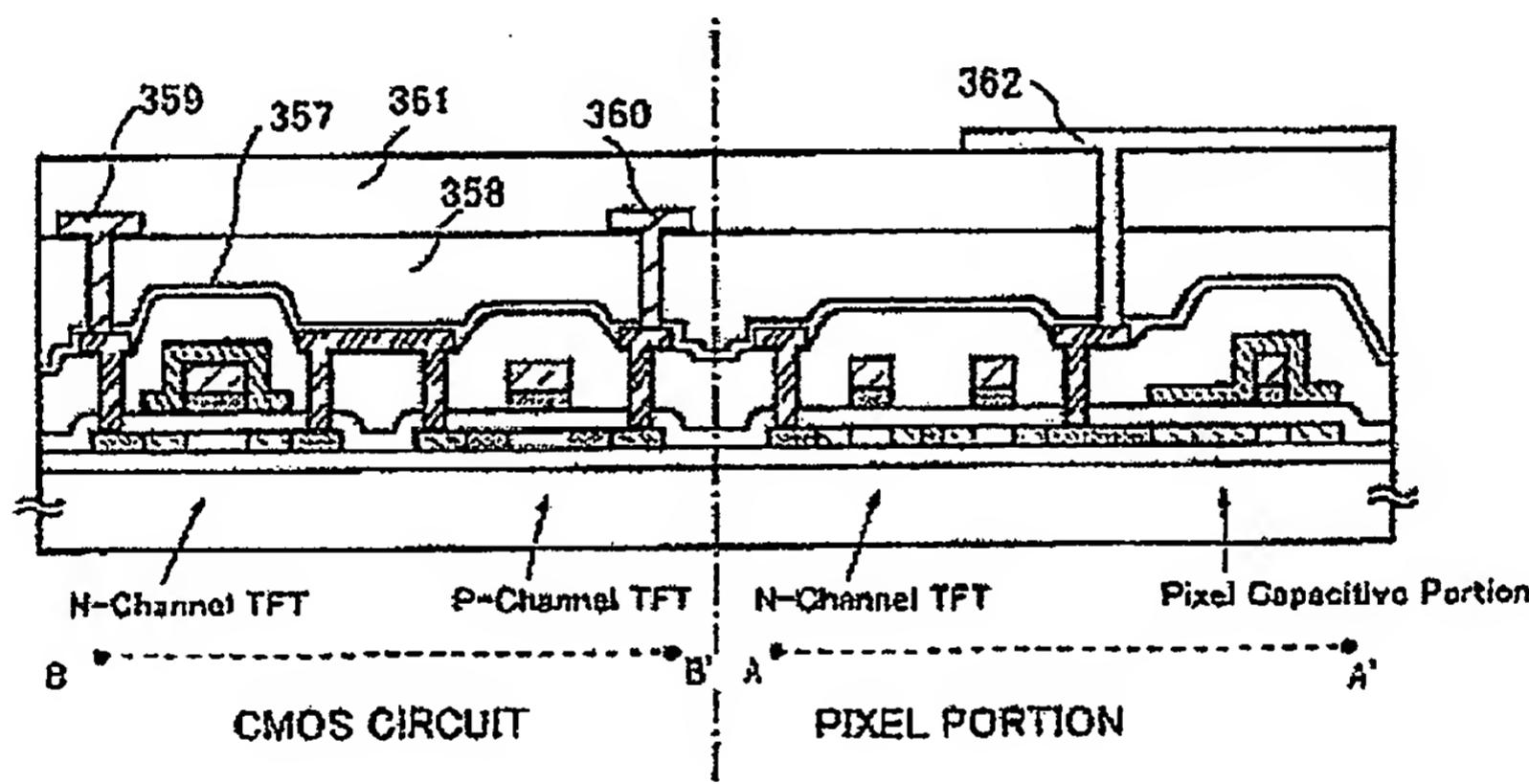
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any teaching that a gate length of the drive transistor is set longer than a gate length of the peripheral transistor and absent is any teaching that the drawings are to scale.

When the reference does not disclose that the drawings are to scale, and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. *In re Wright*, 569 F.2d 1124, 193 USPQ 332(CCPA 1977); MPEP 2125.

Since the specification is completely silent as to the length of the driver transistor relative to the peripheral transistor, it appears that the Examiner is making an argument based on the measurements of the drawing features, which is of little value according to *In re Wright*. Nevertheless, even if the Board is to rely on the figures as the Examiner had done, Fig. 4b of Nakajima actually shows that a gate of the pixel transistor is smaller than the gate of the peripheral transistor. Figure 4b is provided below for the Board's convenience.

FIG. 4B



Stated another way, Fig. 4b is the opposite configuration of that claimed by Appellants. More particularly, Appellants claim a gate length of the drive transistor is set longer than a gate length of the peripheral transistor.

It appears that the Examiner relied upon Figures 22a and 22b for teaching a gate length of the drive transistor is set longer than a gate length of the peripheral transistor. Figs. 22a and 22b, however, show a pixel that is surrounded by the power supply line 3006 and gate line 3038. A first (selection) transistor 3002 and a second (drive) transistor 3003 are shown within the pixel. Therefore, Fig. 22 fails to disclose a peripheral transistor. As such, there is no description of a relationship between the sizes of the gate

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of the second (drive) transistor and of the gate of the peripheral transistor. The Examiner appears to be confusing the selection (first) transistor and the peripheral transistor.

With regards to Appellant's claimed peripheral transistor, it is noted that a first TFT (10), which is a selection TFT (Page 2, lines 1-2), is a different transistor than the peripheral transistor. The peripheral TFT is used for a switching operation, and operates at a high speed by utilizing a power source (Vdd), which is different from that for the second TFT (21). (Page 7, lines 13).

Since Nakajima does not disclose a peripheral transistor disposed within a peripheral circuit which is formed outside of a display area where the plurality of organic EL elements are arranged, wherein a gate length of the drive transistor is set longer than a gate length of the peripheral transistor, Nakajima fails to teach at least one claim element. As such, Claim 1 is not anticipated by Nakajima.

Claims 2-9 are Non-Obvious over Nakajima.

Appellant respectfully submits that the Examiner has failed to make a *prima facie* case of obviousness for at least the reason that at least one claimed element is not taught or suggested by Nakajima.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Independent Claim 5 is directed an organic EL panel having a plurality of organic EL elements arranged in a matrix, comprising, *inter alia*, (a gate length L)/(a gate width W) of the drive transistor is set larger than (a gate length L)/(a gate width W) of the peripheral transistor.

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Dependent Claims 2 and 6 disclose the gate length of the peripheral transistor is set to a value between 1 and 10 μm .

Dependent Claims 3 and 7 disclose the gate length of the drive transistor is set to a value between 10 and 100 μm .

Dependent Claim 4 discloses a gate width of the drive transistor and a gate width of the peripheral transistor are set to the same value.

Dependent Claims 8 and 9 disclose the gate width of the peripheral transistor is respectively set to a value between 5 and 500 μm and the gate width of the drive transistor is set to a value between 5 and 10 μm .

In making the final rejection, the Examiner correctly noted that Nakajima does not disclose the length, width, or the ratio of length/width of gate electrode of the drive and peripheral transistors as claimed by Appellant. (See Final Office Action, page 3). However, the Examiner stated that:

the gate length, width, or the ratio of length/width are considered to involve routine optimization, which has been held to be within the level of ordinary skill in the art....Therefore, one of ordinary skill in the requisite art at the time the invention was made would have used any gate length, width, or the ratio of length/width suitable to the method of the process in order to optimize the design.

(Final O.A., page 4).

The teachings of Nakajima are discussed above. Absent in Nakajima is the necessary suggestion that would have lead one of skill in the art to make Appellant's claimed invention with any reasonable expectation of success. Rather, the Examiner relied upon case law for the motivation to manipulate the length, width, and ratio of the length/width of the gate electrodes of the drive and peripheral transistors.

Appellants respectfully submit that a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognizable result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 19 USPQ 6 (CCPA 1977); MPEP 2144.05. The Examiner has not shown in Nakajima or by a secondary reference that the length, width, and ratio of the length/width of the gate electrodes of the drive and peripheral transistors is a result effective variable to be optimized. As such, it would not involve routine skill in the art to vary the length, width,

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and ratio of the length/width of the gate electrodes of the drive and peripheral transistors to make Appellants claimed invention with any reasonable expectation of success.

Alternatively, if the board were to agree with the Examiner that the length, width, and ratio of the length/width of the gate electrodes of the drive and peripheral transistors is routinely optimized in the art, Appellants respectfully submit that a longer gate length for the drive transistor relative to the peripheral transistor makes it possible to reduce the current to be supplied from the drive transistor to an organic EL element, and to attain current control over a wider range. (Page 2, line 25 to page 3, line 1).

For at least these reasons, Nakajima fails to teach or suggest at least one claimed element of Claims 2-9. Since Nakajima fails to teach or suggest at least one claimed element, the Examiner has not established a *prima facie* case of obviousness.

Accordingly, Claims 2-9 are not obvious and are therefore allowable over Nakajima.

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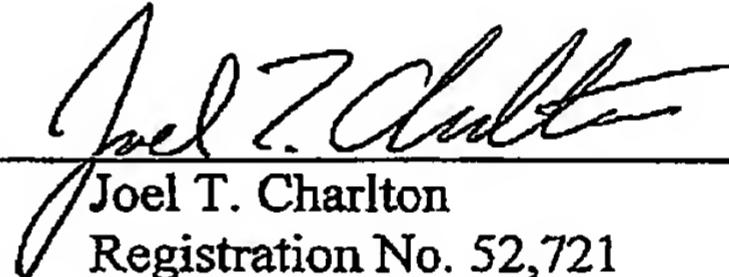
In summary, Claims 1 is not anticipated and Claims 2-9 are non-obvious over the art of record. For the reasons cited above, Appellant respectfully submits that all of the claims are allowable and the application is in condition for allowance. Appellant respectfully requests reversal of the outstanding rejections and allowance of this application.

In the event the Examiner has any queries regarding the submitted arguments, the undersigned respectfully requests the courtesy of a telephone conference to discuss any matters in need of attention.

If there are any additional charges with respect to this Appeal Brief, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

CANTOR COLBURN LLP

By 
Joel T. Charlton
Registration No. 52,721

Date: October 11, 2005
CANTOR COLBURN LLP
55 Griffin Road South
Bloomfield, CT 06002
Telephone (404) 607-9991
Facsimile (404) 607-9981
Customer No. 23413

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VIII. CLAIMS APPENDIX

1. (Previously Presented) An organic EL panel having a plurality of organic EL elements arranged in a matrix, comprising:

a drive transistor provided to each of the plurality of organic EL elements, for controlling a drive current to be supplied to a corresponding organic EL element; and

a peripheral transistor disposed within a peripheral circuit which is formed outside of a display area where the plurality of organic EL elements are arranged, for outputting a signal for controlling the drive transistor,

wherein a gate length of the drive transistor is set longer than a gate length of the peripheral transistor.

2. (Original) The organic EL panel according to claim 1, wherein the gate length of the peripheral transistor is set to a value between 1 and 10 μm .

3. (Original) The organic EL panel according to claim 1, wherein the gate length of the drive transistor is set to a value between 10 and 100 μm .

4. (Original) The organic EL panel according to claim 1, wherein a gate width of the drive transistor and a gate width of the peripheral transistor are set to the same value.

5. (Previously Presented) An organic EL panel having a plurality of organic EL elements arranged in a matrix, comprising:

a drive transistor provided to each of the plurality of organic EL elements, for controlling a drive current to be supplied to a corresponding organic EL element; and

a peripheral transistor disposed within a peripheral circuit which is formed outside of a display area where the plurality of organic EL elements are arranged, for outputting a signal for controlling the drive transistor,

wherein $(\text{a gate length L})/(\text{a gate width W})$ of the drive transistor is set larger than $(\text{a gate length L})/(\text{a gate width W})$ of the peripheral transistor.

6. (Original) The organic EL panel according to claim 5, wherein the gate length of the peripheral transistor is set to a value between 1 and 10 μm .

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7. (Original) The organic EL panel according to claim 5, wherein the gate length of the drive transistor is set to a value between 10 and 100 μ m.
8. (Original) The organic EL panel according to claim 5, wherein the gate width of the peripheral transistor is set to a value between 5 and 500 μ m.
9. (Original) The organic EL panel according to claim 5, wherein the gate width of the drive transistor is set to a value between 5 and 10 μ m.

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IX. EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. §1.130, 37 C.F.R. §1.131, or 37 C.F.R. §1.132 or any other evidence entered by the Examiner and relied upon by the Appellant in this appeal, known to the Appellant, Appellant's legal representatives, or assignee.

X. RELATED PROCEEDING APPENDIX

There are no other related appeals or interferences known to Appellant, Appellant's legal representatives, or assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.